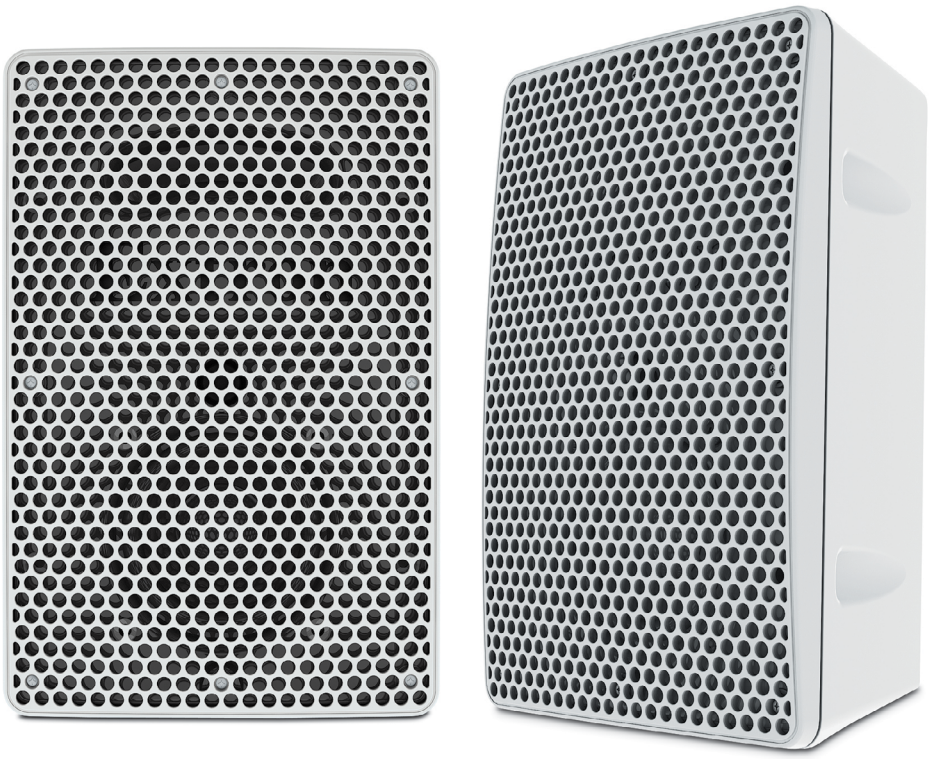
User Guide

Speakers

SM 3

Surface Mount Speakers



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

68-1540-01
Rev. **A**
05 12

Conventions Used in this Guide

In this user guide, the following are used:

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

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Introduction

This user guide contains information about the Extron® SM 3 speaker.

The Extron SM 3 is a compact, fast-installing flush mount speaker featuring the Extron SpeedMount™ System. The enclosure measures less than 4" (10.2 cm) deep. The 8 ohm speaker features a 3" (7.6 cm) full-range driver and tuned bass port, a wide frequency response of 75 Hz to 18 kHz, and a power rating of 15 watts continuous pink noise, 30 watts continuous program capacity. SpeedMount is an Extron-exclusive, concealed mounting system designed to speed up installation. During rough-in, electrical contractors can install a 0° or 10° mounting plate on the wall and terminate the speaker cable to the integrated wiring contacts of the mount. Later, installers can slide the SM 3 speaker onto the mount and secure it into place with a "click," while automatically connecting to the wiring contacts.

The SM 3 speaker is ideally suited for small to medium classrooms and conference rooms where surface mount speakers are desired, but wall space for speaker placement is limited. It provides wide frequency response and wide coverage from a compact enclosure to optimize voice intelligibility without compromising music reproduction.

The exclusive SpeedMount mounting system allows the SM 3 to slide onto the mounting plate and lock into place with a "click." The integrated electrical contacts on the speaker automatically mate with the pre-wired contacts on the mounting plate, further simplifying and speeding up installation. A release on the speaker baffle allows for quick removal from the mount. The hidden release deters theft along with the concealed speaker wiring contacts. When used with the 0° mounting plate, the SM 3 protrudes less than 4" from the wall to comply with ADA - Americans with Disabilities Act standards for protruding object limits.

The SM 3 is sold in pairs and is available in a black or white finish. It includes 0° and 10° mounting plates, and a 5 year parts and labor warranty.

Features

- **Low profile** — Compact low profile, full-range speaker
- **SpeedMount™** — Exclusive SpeedMount mounting system included with 0° and 10° mounting plates
- **Impedance** — 8 ohm nominal impedance
- **Full-range driver** — 3" (7.6 cm) full-range driver with a tuned bass reflex port
- **Frequency response** — Frequency response: 75 Hz to 18 kHz
- **Power** — 15 watts continuous pink noise, 30 watts continuous program
- **Flush mount** — Flush mount design with shallow profile
- **Mounting plate** — Speaker easily slides onto mounting plate, connects to wiring contacts, and secures into place with a "click"
- **ADA compliance** — Complies with ADA requirements on protrusion limits when used with 0° mounting plate

- **Locking release mechanism** — Hidden locking speaker release mechanism
- **Raceway access** – Mounting plates provide cable raceway access for surface-mounted wiring applications
- **Color options** – Black or white high-impact enclosure
- **Dimensions** – With 0° mounting plate: 8.75" H x 5.75" W x 5.6" D (22.2 cm H x 14.6 cm W x 14.2 cm D)
- **Warranty** – 5 year parts and labor warranty

Application Example

Figure 1 below is one example of configuring a system using the SM 3 speakers.

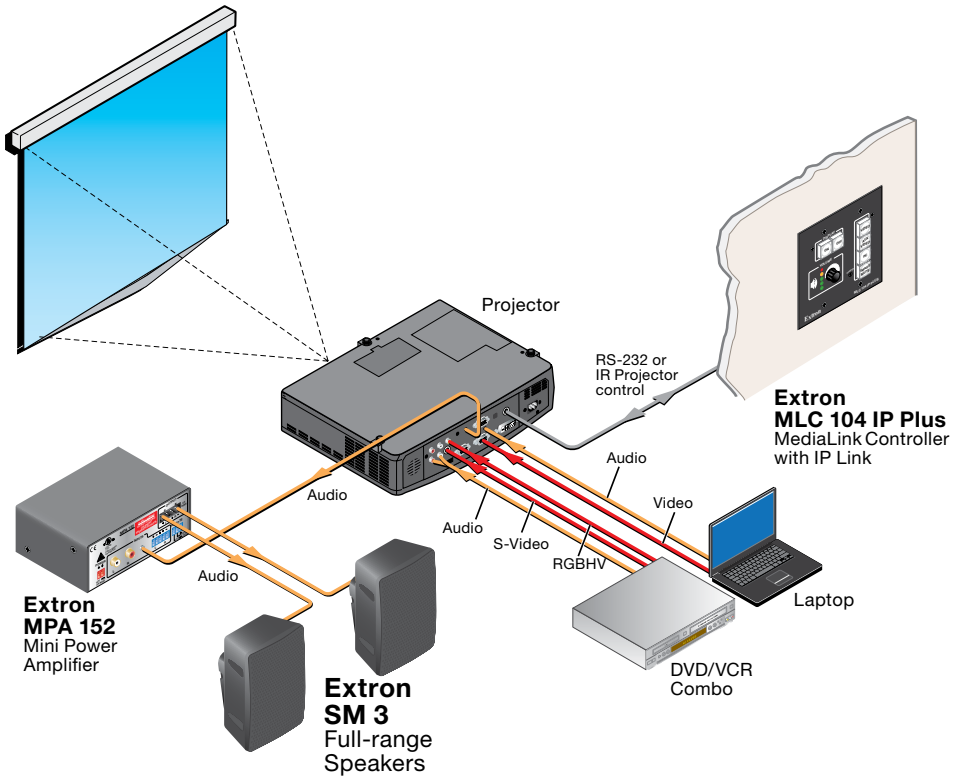


Figure 1. Application example using SM 3 speakers

Installation

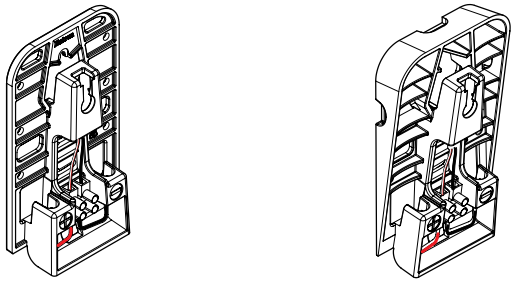
The Installation section describes:

- **Installing the Speaker Mounting Plate**
- **Attaching the Speaker to the Mounting Plate**
- **Removing the Speaker from the Mounting Plate**
- **Attaching a Seismic Support Cable**

Installing the Speaker Mounting Plate

The SM 3 speaker comes with two types of speaker mounting plates:

- **0° mounting plate** — The 0° plate allows the speaker to be mounted flat on a vertical wall with the speaker protruding less than four inches (ADA compliant) from the wall surface (see figure 2 below).
- **10° mounting plate** — The 10° mounting plate allows the speaker to be installed at a 10 degree angle so that the speaker can be pointed down from an elevated position (see figure 2 below).



0° Mounting Plate 10° Mounting Plate

Figure 2. Two types of speaker mounting plates

NOTE: Observe all applicable building codes and local ordinances when installing the speaker.

Mounting to a Wall Box

1. Place the wall box against the installation surface, and mark the guidelines for the opening on the wall.
2. Cut the material from the marked area.
3. Insert the wall box to check the size of the opening and fit. Enlarge or smooth the edges of the opening if needed.
4. Feed cables through punch-out holes of the wall box leaving enough slack for the speaker connections and secure them with cable clamps to provide strain relief.
5. Insert the wall box into the opening and attach it to the wall or stud, leaving the front edge flush with the outer wall (see figure 3 below).
6. To attach a wall box to wood, use four #8 or #10 screws or 10-penny nails. A minimum of 1/2 inch (1.3 cm) of screw threads must penetrate the wood.

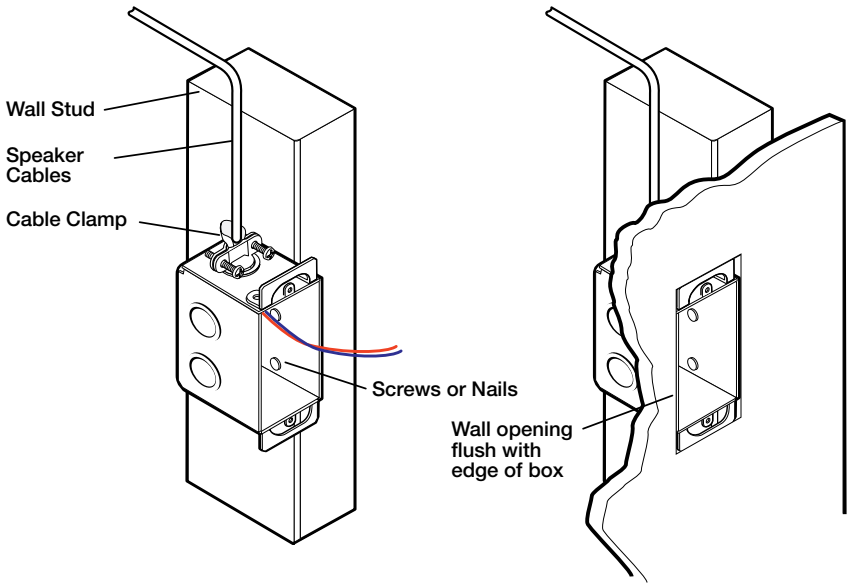


Figure 3. Wall box installation

Wiring the Speaker Mounting Plate

1. Route the two speaker wires through the rear of the mounting plate and attach the wire ends to the quick connect contacts using a small screwdriver (see figure 4 below). Be sure to observe the correct polarity.

   NOTE: The positive (+) connector and the negative (-) connector are marked on the mounting plate.

2. Attach the mounting plate to the wall box (where used), using two mounting screws (see figure 4 below).

   NOTE: The mounting screw holes in the mounting plate allow for some degree of play and lateral movement so that the mounting screws may be aligned properly with the screw holes of the wall box.

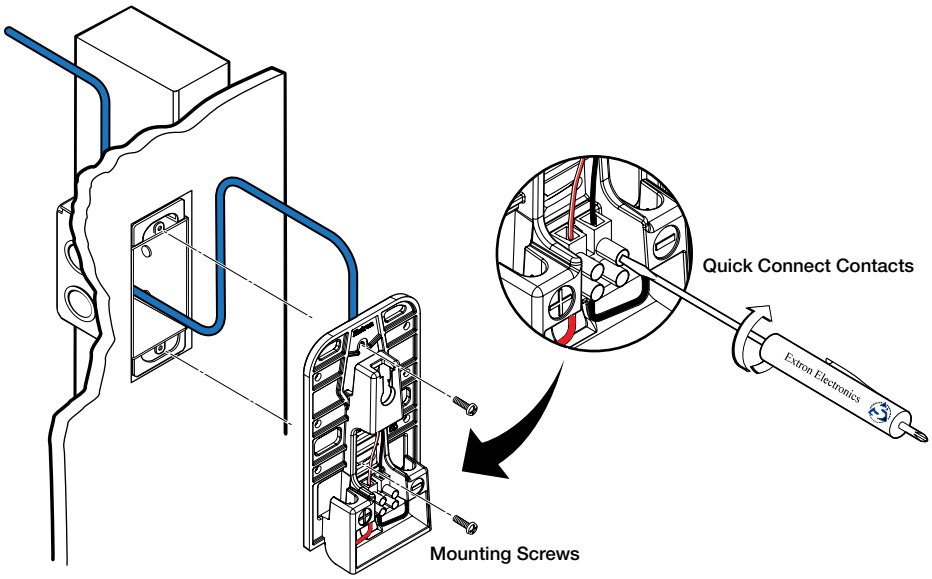


Figure 4. Attaching the mounting plate to a wall box

NOTE: When mounting to surfaces that do not allow wires to be routed from behind (such as on masonry or concrete walls) and the wires are routed to the speakers via a raceway, use the alternate access points (see figure 5 below) to run the wires to the quick connect speaker contacts.

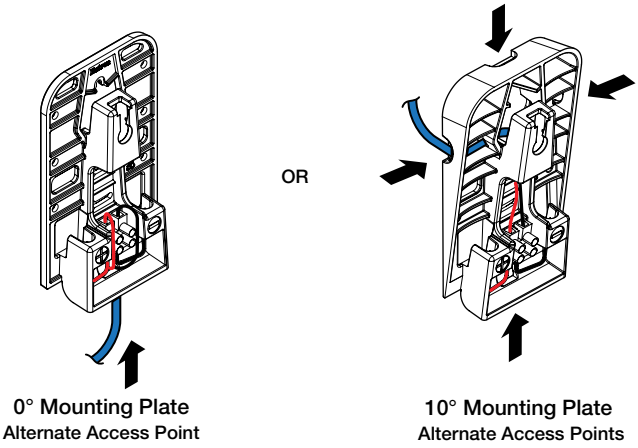


Figure 5. Alternate wire access points

Mounting to a Wall Stud

1. Install the speaker cables into the wall or conduit before installing the speaker mounting plate.
2. Locate the wall stud where the mounting plate will be installed and while positioning the mounting plate on the wall, mark the location of two pilot holes. Use the holes on either side of the mounting plate so that the stud does not interfere with the speaker wire routing (see figure 6 below).

   NOTE: A speaker wire access hole (see figure 6 below) must also be cut in the wall, so mark that hole location now with the mounting plate positioned on the wall, while ensuring that the wall stud does not interfere with the wire routing and that the mounting plate hides the access hole.

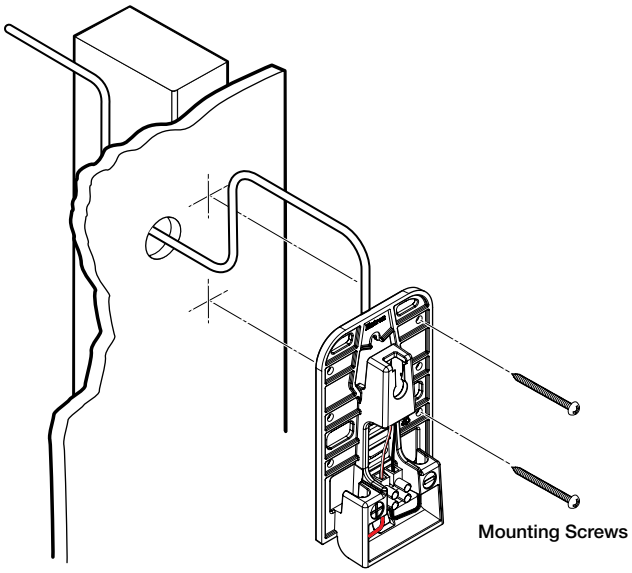


Figure 6. Attaching the mounting plate to a wall

3. Drill the mounting plate pilot holes and cut the speaker wire access hole, as previously marked.
4. Route the speaker cables through the wall without snagging, being sure to leave enough slack to connect the wires to the mounting plate.

Attaching the Speaker to the Mounting Plate

Step 1: Attaching the Speaker

Position the rear mounting slot of the speaker above the catch tab of the mounting plate, then slide the speaker down into the mounting plate so that the speaker is secured in place (see figure 7 below). When properly seated, the speaker connections are automatically made.

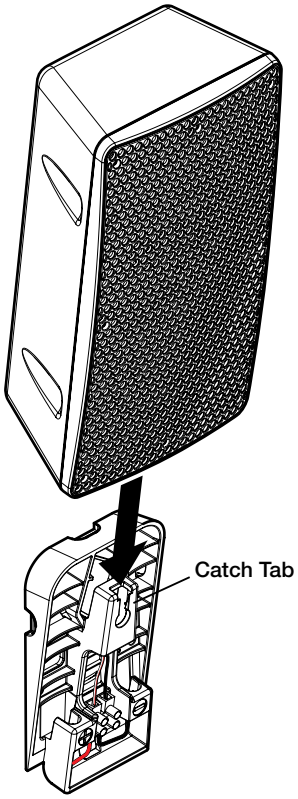


Figure 7. Attaching the speaker

Step 2: Using the Security Key to Lock and Unlock the Speaker

The SM 3 speaker uses an included security key to lock and unlock the speaker to and from the mounting plate (see figure 8 below). The key has two positions: lock and unlock. The active position of the key is nearest the top of the speaker.

NOTE: To avoid misplacing the key, store the key in a secure location for future use.

Insert the key into the center of the speaker grill and turn the key, as needed, so that the speaker is in the unlocked position (see figure 8 below). There are three small raised "dimples" on the grill surface that surrounds the keyhole.

ATTENTION: The key must be rotated to the unlocked postion **before** the speaker is attached to the mounting plate. Failure to place the speaker in the unlocked position will result in damage to the speaker lock mechanism should an attempt be made to mount the speaker.

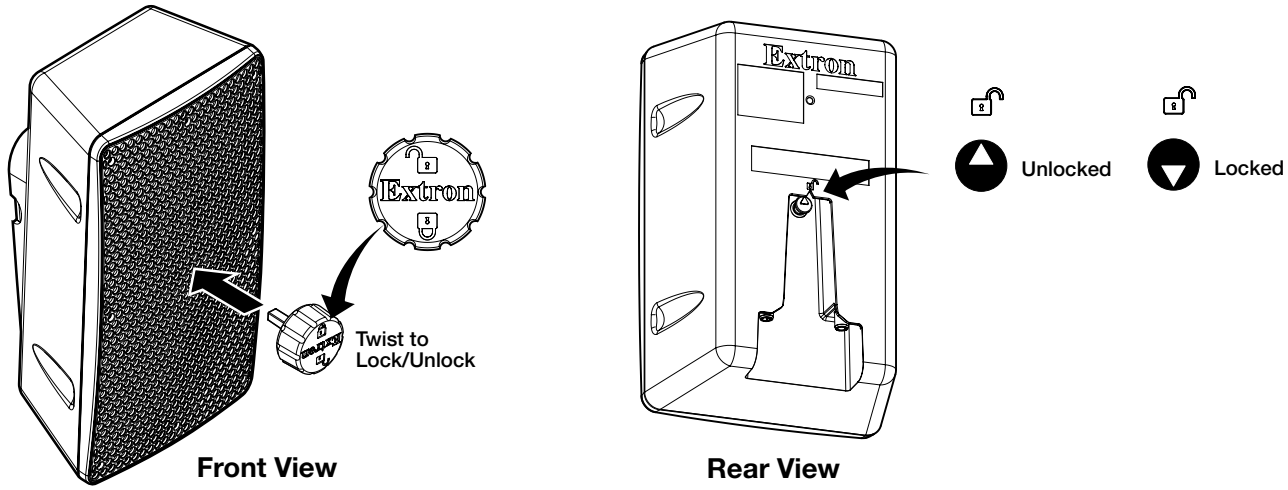


Figure 8. Using the security key

Removing the Speaker from the Mounting Plate

To remove the speaker from the mounting plate, you must unlatch the locking mechanism:

1. Insert the security key into the keyhole of the speaker grill (see Step 2 of the previous section) and turn the key to the unlock position.
2. Remove the security key.
3. Apply pressure with your finger over the keyhole to unlatch the speaker from the mounting plate while lifting up on the speaker (see figure 9 below).

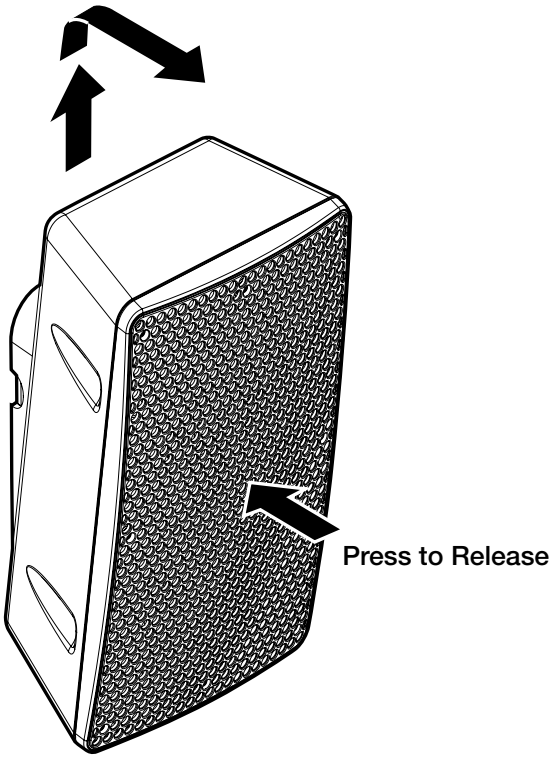


Figure 9. Removing the speaker from the mounting plate

ATTENTION: To avoid damaging or scratching the grill finish, do not use tools or sharp instruments to depress the unlocking mechanism hidden behind the center of the grill.

NOTE: The speaker may be supported by a safety line (see "**Attaching a Seismic Support Cable**" in the following section).

Attaching a Seismic Support Cable

If a seismic support cable is being used, use the included screw to attach a suitable cable to the screw hole (see figure 10 below).

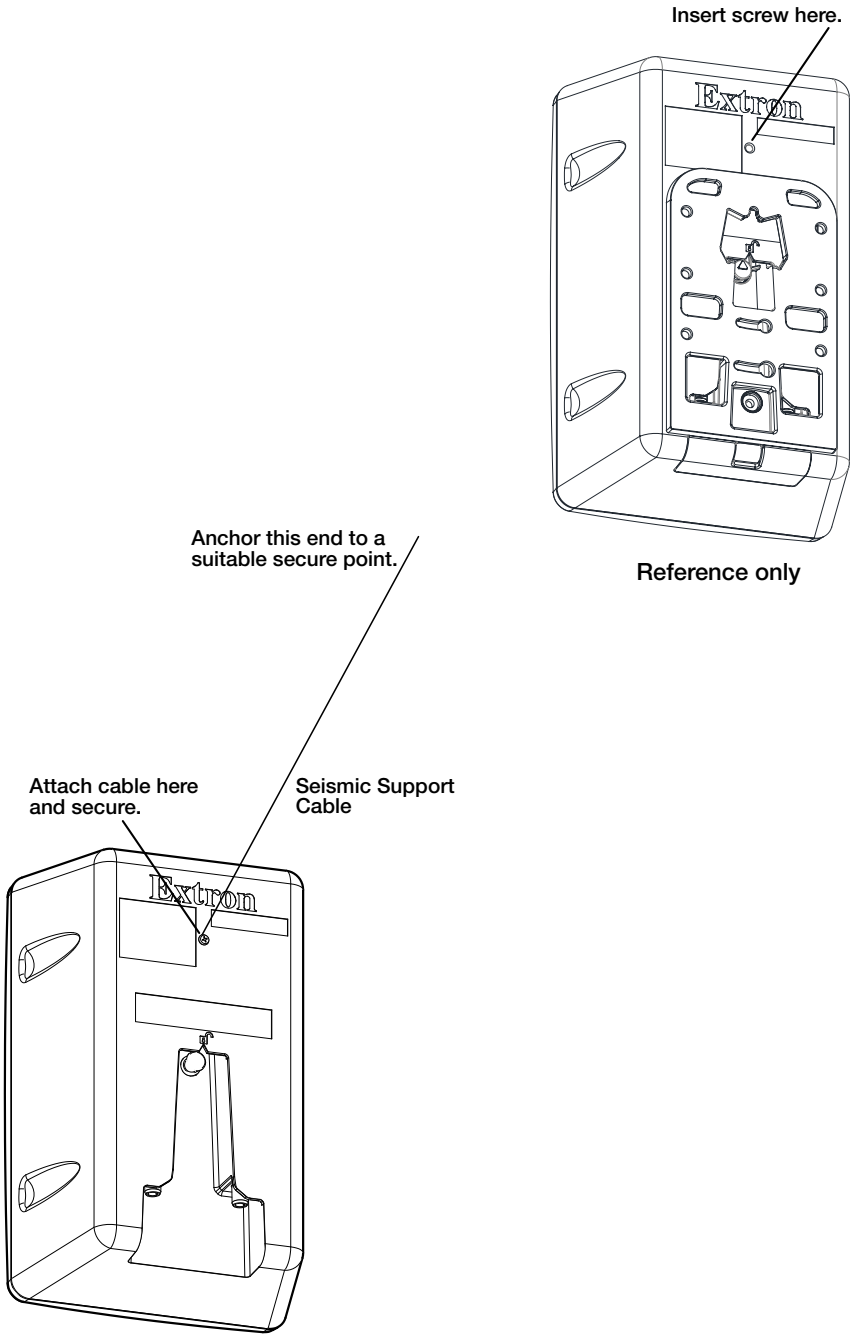


Figure 10. Attaching a seismic support cable

Reference Information

The Reference Information section describes:

- **Specifications**
- **Parts List**
- **Packaging**

Specifications

Audio/acoustic and electrical

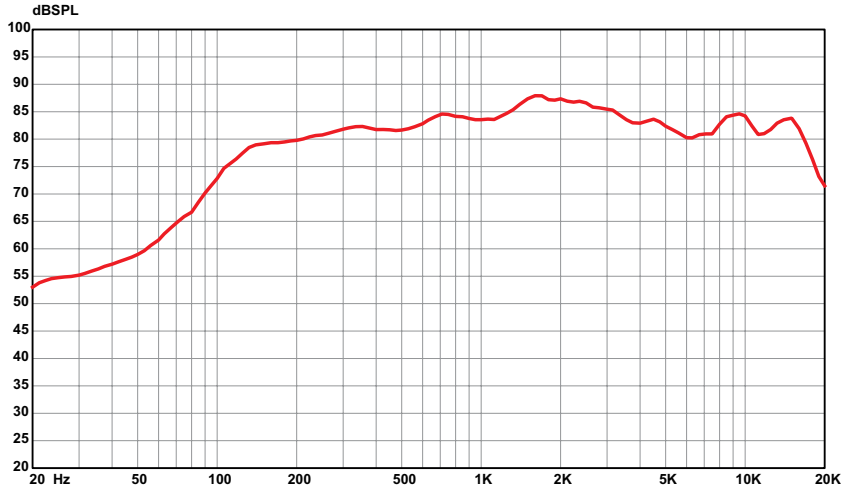
Speaker type	1-way, full range, indoor surface mount speaker
Frequency range	75 Hz to 18 kHz, -10 dB, full space
Power capacity	15 W (rms) continuous pink noise (per IEC 60268-5) 30 W (rms) continuous program
Nominal sensitivity	83 dB SPL, 1 W, 1 m, full space
Nominal impedance	8 ohms
Driver	(1) 3" (76.2 mm) paper cone
Input connectors	
Speaker	2 recessed pins
Mounting plate	(1) 10 mm Euro-style captive screw terminal block, 2 pole

General

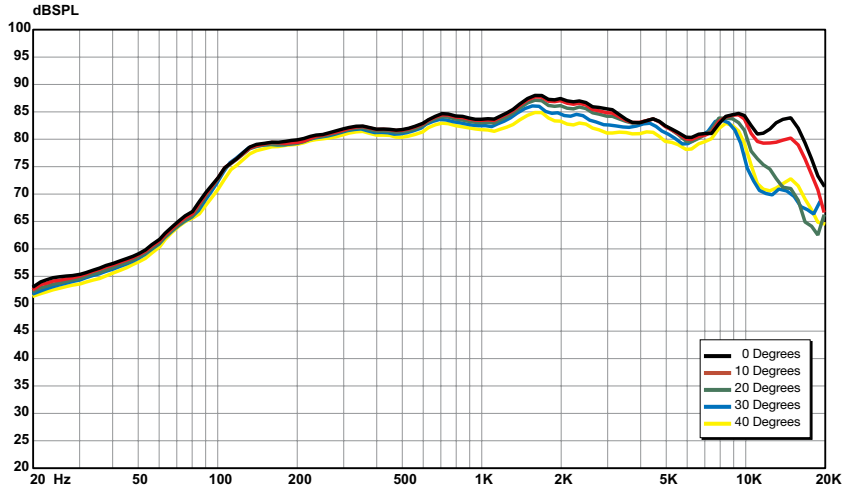
Package	2 speakers (1 pair) with mounting kit
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Mounting	Wall mountable with included mounting plates (0° and 10°)
Enclosure type	Plastic, trapezoidal, with molded grille and front bass reflex port
Enclosure outer dimensions	
With 0° mounting plate	8.75" H x 5.75" W x 4.0" D (22.2 cm H x 14.6 cm W x 10.2 cm D)
With 10° mounting plate	8.9" H x 5.75" W x 5.0" D (22.6 cm H x 14.6 cm W x 12.7 cm D)
Product weight	Single: 2.0 lbs (0.9 kg)
Shipping weight	Pair: 6 lbs (2.7 kg) with mounting kit package
Regulatory compliance	
Safety	CE
Environmental	Complies with the appropriate requirements of RoHS, WEEE.
Warranty	5 years parts and labor

SM 3 RESPONSE GRAPHS – FREQUENCY AND IMPEDANCE

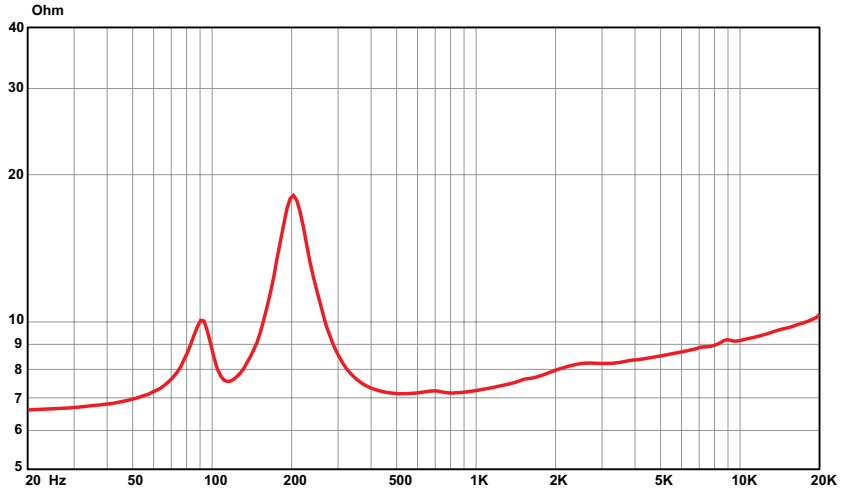
SPL vs. FREQUENCY



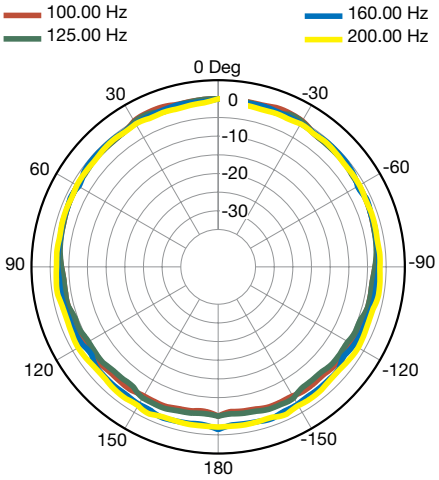
SPL vs. FREQUENCY – HORIZONTAL OFF-AXIS RESPONSE



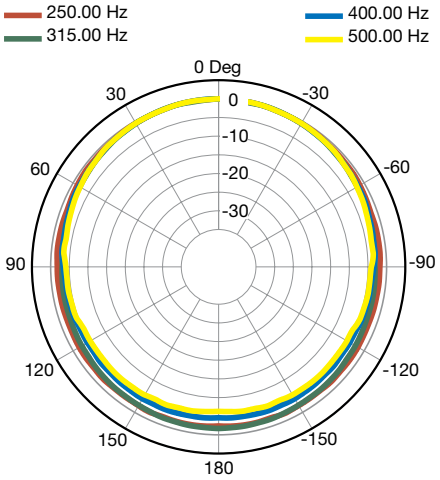
IMPEDANCE vs. FREQUENCY



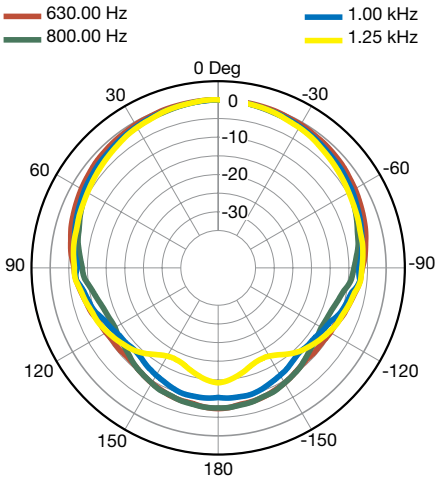
SM 3 POLAR GRAPHS – 1/3 OCTAVE, HORIZONTAL



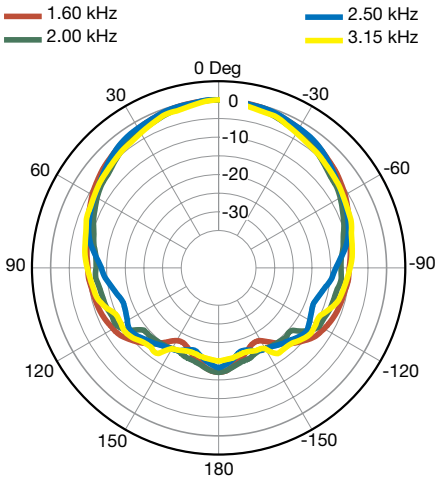
100 Hz - 200 Hz



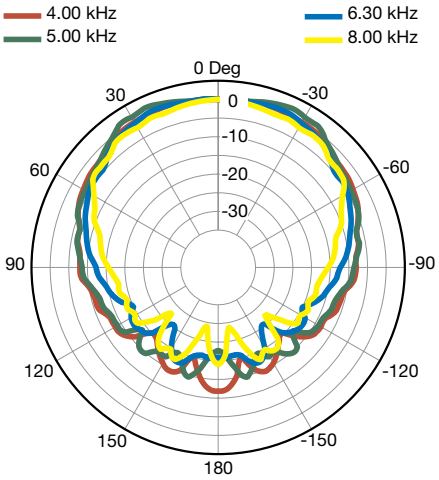
250 Hz - 500 Hz



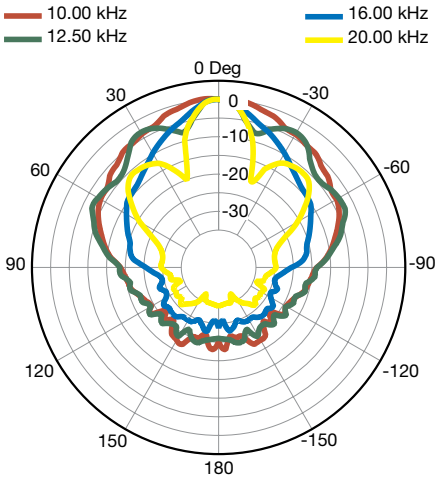
630 Hz - 1.25 kHz



1.6 kHz - 3.15 kHz



4 kHz - 8 kHz



10 kHz - 20 kHz

Parts List

Included Parts

Description	Part Number
SM 3 speaker kit, black	42-133-02
SM 3 speaker kit, white	42-133-03
SM 3 Setup Guide	

Optional Accessories

Description	Part Number
SM 3 replacement wall mounting kit, black	70-930-02
SM 3 replacement wall mounting kit, white	70-930-03

Packaging

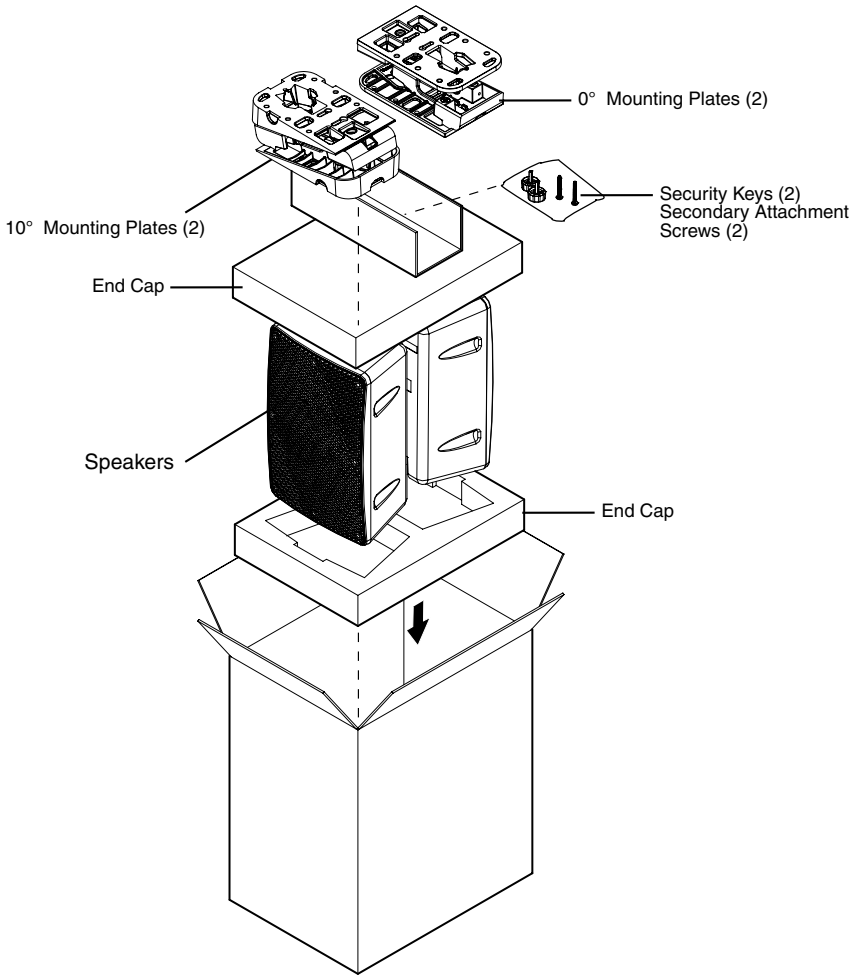


Figure 11. Packaging diagram

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of five years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
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China

Asia:
Extron Asia
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PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 **Europe**: 31.33.453.4040
Asia: 65.6383.4400 **Japan**: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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